



(11)

EP 4 068 364 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
14.12.2022 Bulletin 2022/50

(51) International Patent Classification (IPC):
H01L 27/146 ^(2006.01) **H04N 5/361** ^(2011.01)
H04N 5/369 ^(2011.01) **H04N 5/359** ^(2011.01)

(43) Date of publication A2:
05.10.2022 Bulletin 2022/40

(52) Cooperative Patent Classification (CPC):
**H04N 5/361; H01L 27/14603; H01L 27/1461;
H01L 27/14612; H04N 5/3591; H04N 5/36963;
H01L 27/14643**

(21) Application number: **22162897.7**

(22) Date of filing: **18.03.2022**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
 GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
 PL PT RO RS SE SI SK SM TR**
 Designated Extension States:
BA ME
 Designated Validation States:
KH MA MD TN

(71) Applicant: **CANON KABUSHIKI KAISHA**
OHTA-KU
Tokyo 146-8501 (JP)

(72) Inventor: **ONUKI, Yusuke**
Ohta-ku, 146-8501 (JP)

(74) Representative: **TBK**
Bavariaring 4-6
80336 München (DE)

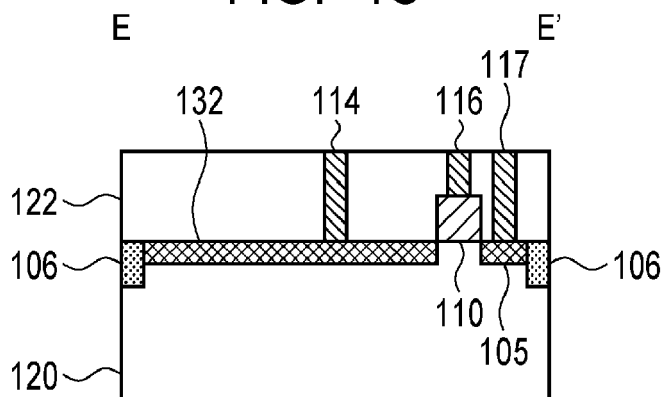
(30) Priority: 31.03.2021 JP 2021060266

(54) PHOTOELECTRIC CONVERSION DEVICE

(57) Provided is a photoelectric conversion device including a pixel array including a first pixel and a second pixel. The first pixel includes a photoelectric conversion unit including a first semiconductor region of a first conductivity type as a charge accumulation layer and photoelectrically converts incident light to generate a signal

in accordance with the incident light, and the second pixel includes a second semiconductor region of the first conductivity type and a transistor including a first main electrode formed by a third semiconductor region connected to the second semiconductor region and a gate.

FIG. 4C





PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 22 16 2897

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2014/027617 A1 (AMIKAWA HIROYUKI [JP]) 30 January 2014 (2014-01-30) * figures 2-4, 11 * -----	1, 4-15	INV. H01L27/146 H04N5/361 H04N5/369 H04N5/359
A	US 2013/076951 A1 (ENDO SUZUNORI [JP]) 28 March 2013 (2013-03-28) * figures 2-5 *	1, 4-15	
A	US 2016/006965 A1 (LEE JUN SUK [KR] ET AL) 7 January 2016 (2016-01-07) * figures 2-24 *	1, 4-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			H01L H04N

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

1

Place of search	Date of completion of the search	Examiner
Munich	2 November 2022	Doswald, Daniel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

EPO FORM 1503 03.82 (P04E07)



INCOMPLETE SEARCH
SHEET C

Application Number

EP 22 16 2897

5

10

15

20

25

30

35

40

45

50

55

Claim(s) completely searchable:

1

Claim(s) searched incompletely:

4-15

Claim(s) not searched:

2, 3

Reason for the limitation of the search:

Rule 62a EPC

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 16 2897

5

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

02-11-2022

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2014027617 A1	30-01-2014	JP 6052622 B2	27-12-2016
		JP WO2012144181 A1	28-07-2014
		US 2014027617 A1	30-01-2014
		WO 2012144181 A1	26-10-2012
<hr/>			
US 2013076951 A1	28-03-2013	CN 103022065 A	03-04-2013
		JP 2013069958 A	18-04-2013
		US 2013076951 A1	28-03-2013
<hr/>			
US 2016006965 A1	07-01-2016	KR 20160005573 A	15-01-2016
		US 2016006965 A1	07-01-2016
		US 2017229500 A1	10-08-2017
<hr/>			